Table F-38. Emission Source Data for the Shellmounds Project Alternative 1 - SCAB Project Region.

Construction Activity/Equipment Type	*Power Rating (Hp)*	*Load Factor*	*# Active*	*Hours Per Day*	*Daily Hp-Hrs*	*Work Days*	*Total Hp-Hrs*
Transport and Disposal - LA-2 Option							
Tug Boat (1) (2)	3,500	0.80	2	9.6	2,688	12.5	33,600
Transport and Disposal - POLB Re-Use Option							
Tug Boat (1) (2)	3,500	0.80	2	12.8	3,584	12.5	44,800
Transport to POLB/Kern Co. Disposal Option							
Tug Boat (1) (2)	3,500	0.80	2	12.8	3,584	12.5	44,800
Crane - 60-Ton (3)	190	0.50	1	12	1,140	12.5	14,250
Haul Trucks - To Upland Site (4)	NA	NA	170	270	45,900	12.5	573,750
Transport to POLB/SCAB Upland Disposal Option							
Tug Boat (1) (2)	3,500	0.80	2	12.8	3,584	12.5	44,800
Crane - 60-Ton (3)	190	0.50	1	12	1,140	12.5	14,250
Haul Trucks - Upland disposal (5)	NA	NA	108	270	29,160	12.5	364,500

Notes: (1) Hours per day = round trip travel time only within the SCAB project region at 5 kts.

(2) Daily and Total Hp-Hrs = daily and total fuel usages in gallons for vessel main engines.

(3) Hourly removal rate = 15 cy bucket * 30 lifts/hr = 450 cyh. Daily volume transferred = 3,600 cy solid + 33% water = 5,400 cy.

(4) Number Active is the roundtrip miles within the SCAB between the POLB and Kern County, Hours/Day are the daily trips, and Daily and Total Hp-Hrs are daily and total miles. With a truck capacity of 20 cy, daily truck trips = 5,400 cy/ 20 cy = 270.

(5) Same as #4, but mileage based on roundtrip to and from West Covina Landfill.

Table F-39. Emission Source Data for the Shellmounds Project Alternative 2 - SCAB Project Region.

Construction Activity/Equipment Type	*Power Rating (Hp)*	*Load Factor*	*# Active*	*Hours Per Day*	*Daily Hp-Hrs*	*Work Days*	*Total Hp-Hrs*
Transport to POLB/SCAB Upland Disposal							
Tug Boat (1) (2)	3,500	0.80	1	12.8	1,792	1.0	1,792
Crane - 60-Ton	190	0.50	1	8	760	1.0	760
Haul Trucks - Upland disposal (3)	NA	NA	108	110	11,880	1.0	11,880

Notes: (1) Hours per day = round trip travel time only within the SCAB project region at 5 kts.

(2) Daily and Total Hp-Hrs = daily and total fuel usages in gallons for vessel main engines. Assumes the use of one 3,600 cy barge to transport the estimated 2,200 cy of caisson materials.

(3) Number Active is the roundtrip miles between the POLB and Covina Hills Landfill, Hours/Day are the daily trips, and Daily and Total Hp-Hrs are the daily and total miles. With a truck capacity of 20 cy, daily truck trips = 2,200 cy/ 20 cy = 110.

Table F-40. Emission Source Data for the Shellmounds Project Alternative 3 - SCAB Project Region.

Construction Activity/Equipment Type	*Power Rating (Hp)*	*Load Factor*	*# Active*	*Hours Per Day*	*Daily Hp-Hrs*	*Work Days*	*Total Hp-Hrs*
Material Transport/Placement - 6% Slope Option (1)							
Tug Boat (2) (3)	3,500	0.80	4	12.8	7,168	71.0	508,928
Material Transport/Placement - 4% Slope Option (4)							
Tug Boat (2) (3)	3,500	0.80	4	12.8	7,168	166.0	1,189,888

Notes: (1) The 6% slope alternative would require 612,000 cy of material. Barge capacity = 3,600 cy. Since hydraulic dredge sediments = 40% water, solid content of barge = 3,600 * 0.6 = 2,160 cy. Total number of barges = 612,000 cy/2,160 cy = 284.

(2) Hours per day = round trip travel time only within the SCAB project region at 5 kts.

(3) Daily and Total Hp-Hrs = daily and total fuel usages in gallons for vessel main engines.

(4) The 4% slope alternative would require 1,432,000 cy of material. Total number of barges = 1,432,000 cy/2,160 cy = 663.

Table F-41. Emission Source Data for the Shellmounds Project Alternatives 4 or 5b - SCAB Project Region.

Construction Activity/Equipment Type	*Power Rating (Hp)*	*Load Factor*	*# Active*	*Hours Per Day*	*Hourly Hp-Hrs*	*Work Days*	*Total Hp-Hrs*
Rock Transport and Placement (1)							
Tug Boat (2) (3)	2,200	0.80	1	13.6	1,197	8.0	9,574

Notes: (1) The alternative would require 16,000 tons of rock. Barge capacity = 2,000 tons.

(2) Hours per day = round trip travel time only within the SCAB project region at 5 kts.

(3) Daily and Total Hp-Hrs = daily and total fuel usages in gallons for vessel main engines.

Table F-42. Emission Source Data for the Shellmounds Project Alternative 5a - SCAB Project Region.

Construction Activity/Equipment Type	*Power Rating (Hp)*	*Load Factor*	*# Active*	*Hours Per Day*	*Daily Hp-Hrs*	*Work Days*	*Total Hp-Hrs*
Transport and Disposal - LA-2 Option							
Tug Boat (1) (2)	3,500	0.80	2	9.6	2,688	12.5	33,600
Transport and Disposal - POLB Re-Use Option							
Tug Boat (1) (2)	3,500	0.80	2	12.8	3,584	12.5	44,800
Transport to POLB/Kern Co. Disposal Option							
Tug Boat (1) (2)	3,500	0.80	2	12.8	3,584	12.5	44,800
Crane - 60-Ton (3)	190	0.50	1	12	1,140	12.5	14,250
Haul Trucks - To Upland Site (4)	NA	NA	170	270	45,900	12.5	573,750
Transport to POLB/SCAB Upland Disposal Option							
Tug Boat (1) (2)	3,500	0.80	2	12.8	3,584	12.5	44,800
Crane - 60-Ton (3)	190	0.50	1	12	1,140	12.5	14,250
Haul Trucks - To Upland Site (5)	NA	NA	108	270	29,160	12.5	364,500
Rock Transport and Placement (6)							
Tug Boat (1) (2)	2,200	0.80	1	13.6	1,197	8.0	9,574

Notes: (1) Hours per day = round trip travel time only within the SCAB project region at 5 kts.

(2) Daily and Total Hp-Hrs = daily and total fuel usages in gallons for vessel main engines.

(3) Hourly removal rate = 15 cy bucket * 30 lifts/hr = 450 cyh. Daily volume transferred = 3,600 cy solid + 33% water = 5,400 cy.

(4) Number Active is the roundtrip miles within the SCAB between the POLB and Kern County, Hours/Day are the daily trips, and Daily and Total Hp-Hrs are daily and total miles. With a truck capacity of 20 cy, daily truck trips = 5,400 cy/ 20 cy = 270.

(5) Same as #4, but mileage based on roundtrip to and from West Covina Landfill.

(6) The alternative would require 16,000 tons of rock. Barge capacity = 2,000 tons.

Table F-43. Daily Emissions from the Shellmounds Project Alternative 1 - SCAB Project Region.

Activity/Equipment Type	*Daily Emissions (Pounds)*				
	ROG	*CO*	*NOx*	*SO2*	*PM10*
Transport and Disposal - LA-2 Option					
Tug Boat	49.0	153.2	1,126.3	72.3	24.2
Transport and Disposal - POLB Re-Use Option					
Tug Boat	65.4	204.3	1,501.7	96.4	32.3
Transport to POLB/Kern Co. Disposal Option					
Tug Boat	65.4	204.3	1,501.7	96.4	32.3
Crane - 60-Ton	2.2	10.6	27.6	0.5	1.4
Haul Trucks - To Upland Site	79.1	1,043.5	1,820.4	13.2	31.0
Transport and Disposal Option Emissions - Subtotal	147	1,258	3,350	110	65
Transport to POLB/SCAB Upland Disposal Option					
Tug Boat	65.4	204.3	1,501.7	96.4	32.3
Crane - 60-Ton	2.2	10.6	27.6	0.5	1.4
Haul Trucks - Upland disposal	50.8	665.6	1,160.8	8.4	19.7
Transport and Disposal Option Emissions - Subtotal	118	880	2,690	105	53
Total and Peak Daily Emissions - LA-2 Disposal Option	49	153	1,126	72	24
Mitigated Peak Daily Emissions - LA-2 Disposal Option (1)	49	153	800	72	9
Total and Peak Daily Emissions - POLB Re-Use Option	65	204	1,502	96	32
Mitigated Peak Daily Emissions - POLB Re-Use Option (1)	65	204	1,066	96	12
Total and Peak Daily Emissions - Kern Co. Disposal Option	147	1,258	3,350	110	65
Mitigated Peak Daily Emissions - Kern Co. Disposal Option (1)	147	1,258	2,378	110	24
Total and Peak Daily Emissions - SCAB Upland Disposal Option	118	880	2,690	105	53
Mitigated Peak Daily Emissions - SCAB Upland Disposal Option (1)	118	880	1,910	105	20

Note: (1) Use of emulsified diesel fuel would reduce NOx and PM emissions from these sources by 14 and 62.9 percent, respectively.

Table F-44. Daily Emissions from the Shellmounds Project Alternative 2 - SCAB Project Region.

Activity/Equipment Type	*Daily Emissions (Pounds)*				
	ROG	*CO*	*NOx*	*SO2*	*PM10*
Transport to POLB/Upland Disposal in SCAB					
Tug Boat	32.7	102.1	750.8	48.2	16.1
Crane - 60-Ton	1.5	7.0	18.4	0.3	0.9
Haul Trucks - Upland disposal	20.7	271.2	472.9	3.4	8.0
Transport and Upland Disposal Emissions	55	380	1,242	52	25
Total and Peak Daily Emissions	55	380	1,242	52	25
Mitigated Peak Daily Emissions (1)	55	380	882	52	9

Note: (1) Use of emulsified diesel fuel would reduce NOx and PM emissions from these sources by 14 and 62.9 percent, respectively.

Table F-45. Daily Emissions from the Shellmounds Project Alternative 3 - SCAB Project Region.

Activity/Equipment Type	*Daily Emissions (Pounds)*				
	ROG	*CO*	*NOx*	*SO2*	*PM10*
Material Transport/Placement - 6% Slope Option					
Tug Boat	130.7	408.6	3,003.4	192.8	64.5
Material Transport/Placement - 4% Slope Option					
Tug Boat	130.7	408.6	3,003.4	192.8	64.5
Total and Peak Daily Emissions - 6% Slope Option	131	409	3,003	193	65
Mitigated Peak Daily Emissions - 6% Slope Option (1)	131	409	2,132	193	24
Total and Peak Daily Emissions - 4% Slope Option	131	409	3,003	193	65
Mitigated Peak Daily Emissions - 4% Slope Option (1)	131	409	2,132	193	24

Note: (1) Use of emulsified diesel fuel would reduce NOx and PM emissions from these sources by 14 and 62.9 percent, respectively.

Table F-46. Daily Emissions from the Shellmounds Project Alternatives 4 or 5b - SCAB Project Region.

Activity/Equipment Type	*Daily Emissions (Pounds)*				
	ROG	*CO*	*NOx*	*SO2*	*PM10*
Rock Transport and Placement					
Tug Boat	21.8	68.2	501.5	32.2	10.8
Alternative 4 or 5b Total and Peak Daily Emissions	22	68	501	32	11
Alternative 4 or 5b Mitigated Peak Daily Emissions (1)	22	68	356	32	4

Note: (1) Use of emulsified diesel fuel would reduce NOx and PM emissions from these sources by 14 and 62.9 percent, respectively.

Table F-47. Daily Emissions from the Shellmounds Project Alternative 5a - SCAB Project Region.

Activity/Equipment Type	*Daily Emissions (Pounds)*				
	ROG	*CO*	*NOx*	*SO2*	*PM10*
Transport and Disposal - LA-2 Option					
Tug Boat	49.0	153.2	1,126.3	72.3	24.2
Transport and Disposal - POLB Re-Use Option					
Tug Boat	65.4	204.3	1,501.7	96.4	32.3
Transport to POLB/Kern Co. Disposal Option					
Tug Boat	65.4	204.3	1,501.7	96.4	32.3
Crane - 60-Ton	2.2	10.6	27.6	0.5	1.4
Haul Trucks - Upland disposal	79.1	1,043.5	1,820.4	13.2	31.0
Transport and Disposal Option Emissions - Subtotal	147	1,258	3,350	110	65
Transport to POLB/SCAB Upland Disposal Option					
Tug Boat	65.4	204.3	1,501.7	96.4	32.3
Crane - 60-Ton	2.2	10.6	27.6	0.5	1.4
Haul Trucks - Upland disposal	50.8	665.6	1,160.8	8.4	19.7
Transport and Disposal Option Emissions - Subtotal	118	880	2,690	105	53
Rock Transport and Placement					
Tug Boat	21.8	68.2	501.5	32.2	10.8
Total Daily Emissions - LA-2 Disposal Option	71	221	1,628	105	35
Peak Daily Emissions - LA-2 Disposal Option (1)	49	153	1,126	72	24
Mitigated Peak Daily Emissions - LA-2 Disposal Option (2)	49	153	800	72	9
Total Daily Emissions - POLB Re-Use Option	87	273	2,003	129	43
Peak Daily Emissions - POLB Re-Use Option (1)	65	204	1,502	96	32
Mitigated Peak Daily Emissions - POLB Re-Use Option (2)	65	204	1,066	96	12
Total Daily Emissions - Kern Co. Disposal Option	168	1,327	3,851	142	75
Peak Daily Emissions - Kern Co. Disposal Option (1)	147	1,258	3,350	110	65
Mitigated Peak Daily Emissions - Kern Co. Disposal Option (2)	147	1,258	2,378	110	24
Total Daily Emissions - SCAB Upland Disposal Option	140	949	3,192	137	64
Peak Daily Emissions - SCAB Upland Disposal Option (1)	118	880	2,690	105	53
Mitigated Peak Daily Emissions - SCAB Upland Disposal Option (2)	118	880	1,910	105	20

Note: (1) Peak daily emissions would occur during transport of shell mounds by tugboat and/or haul trucks.

(2) Use of emulsified diesel fuel would reduce NOx and PM emissions from these sources by 14 and 62.9 percent, respectively.

Table F-48. Total Emissions from the Shellmounds Project Alternative 1 - SCAB Project Region.

Activity/Equipment Type	*Total Emissions (Tons)*				
	ROG	*CO*	*NOx*	*SO2*	*PM10*
Transport and Disposal - LA-2 Option					
Tug Boat	0.31	0.96	7.04	0.45	0.15
Transport and Disposal - POLB Re-Use Option					
Tug Boat	0.41	1.28	9.39	0.60	0.20
Transport to POLB/Kern Co. Disposal Option					
Tug Boat	0.41	1.28	9.39	0.60	0.20
Crane - 60-Ton	0.01	0.07	0.17	0.00	0.01
Haul Trucks - To Upland Site	0.49	6.52	11.38	0.08	0.19
Transport and Disposal Option Emissions - Subtotal	0.92	7.86	20.94	0.69	0.40
Transport to POLB/SCAB Upland Disposal Option					
Tug Boat	0.41	1.28	9.39	0.60	0.20
Crane - 60-Ton	0.01	0.07	0.17	0.00	0.01
Haul Trucks - Upland disposal	0.32	4.16	7.25	0.05	0.12
Transport and Disposal Option Emissions - Subtotal	0.74	5.50	16.81	0.66	0.33
Total Emissions - LA-2 Disposal Option	0.31	0.96	7.04	0.45	0.15
Mitigated Total Emissions - LA-2 Disposal Option	0.31	0.96	5.00	0.45	0.06
Total Emissions - POLB Re-Use Option	0.41	1.28	9.39	0.60	0.20
Mitigated Total Emissions - POLB Re-Use Option	0.41	1.28	6.66	0.60	0.07
Total Emissions - Kern Co. Disposal Option	0.92	7.86	20.94	0.69	0.40
Mitigated Total Emissions - Kern Co. Disposal Option	0.92	7.86	14.86	0.69	0.15
Total Emissions - SCAB Upland Disposal Option	0.74	5.50	16.81	0.66	0.33
Mitigated Total Emissions - SCAB Upland Disposal Option	0.74	5.50	11.94	0.66	0.12

Table F-49. Total Emissions from the Shellmounds Project Alternative 2 - SCAB Project Region.

Activity/Equipment Type	*Total Emissions (Tons)*				
	ROG	*CO*	*NOx*	*SO2*	*PM10*
Transport to POLB/Upland Disposal in SCAB					
Tug Boat	0.02	0.05	0.38	0.02	0.01
Crane - 60-Ton	0.00	0.00	0.01	0.00	0.00
Haul Trucks - Upland disposal	0.01	0.14	0.24	0.00	0.00
Transport and Upland Disposal Emissions	0.03	0.19	0.62	0.03	0.01
Total Alternative 2 Emissions	0.03	0.19	0.62	0.03	0.01
Mitigated Total Emissions	0.03	0.19	0.51	0.03	0.01

Table F-50. Total Emissions from the Shellmounds Project Alternative 3 - SCAB Project Region.

Activity/Equipment Type	*Total Emissions (Tons)*				
	ROG	*CO*	*NOx*	*SO2*	*PM10*
Material Transport/Placement - 6% Slope Option					
Tug Boat	4.64	14.50	106.62	6.85	2.29
Material Transport/Placement - 6% Slope Option Emissions	4.64	14.50	106.62	6.85	2.29
Material Transport/Placement - 4% Slope Option					
Tug Boat	10.85	33.91	249.28	16.00	5.35
Material Transport/Placement - 4% Slope Option Emissions	10.85	33.91	249.28	16.00	5.35
Total Alternative 3 Emissions - 6% Slope Option	4.64	14.50	106.62	6.85	2.29
Mitigated Total Alternative 3 Emissions - 6% Slope Option	4.64	14.50	75.70	6.85	0.85
Total Alternative 3 Emissions - 4% Slope Option	10.85	33.91	249.28	16.00	5.35
Mitigated Total Alternative 3 Emissions - 4% Slope Option	10.85	33.91	176.99	16.00	1.99

Table F-51. Total Emissions from the Shellmounds Project Alternatives 4 or 5b - SCAB Project Region.

Activity/Equipment Type	*Total Emissions (Tons)*				
	ROG	*CO*	*NOx*	*SO2*	*PM10*
Rock Transport and Placement					
Tug Boat	0.09	0.27	2.01	0.13	0.04
Total Alternative 4 or 5b Emissions	0.09	0.27	2.01	0.13	0.04
Mitigated Total Alternative 4 or 5b Emissions	0.09	0.27	1.42	0.13	0.02

Table F-52. Total Emissions from the Shellmounds Project Alternative 5a - SCAB Project Region.

Activity/Equipment Type	*Total Emissions (Tons)*				
	ROG	*CO*	*NOx*	*SO2*	*PM10*
Transport and Disposal - LA-2 Option					
Tug Boat	0.31	0.96	7.04	0.45	0.15
Transport and Disposal - POLB Re-Use Option					
Tug Boat	0.41	1.28	9.39	0.60	0.20
Transport to POLB/Kern Co. Disposal Option					
Tug Boat	0.41	1.28	9.39	0.60	0.20
Crane - 60-Ton	0.01	0.07	0.17	0.00	0.01
Haul Trucks - Upland disposal	0.49	6.52	11.38	0.08	0.19
Transport and Disposal Option Emissions - Subtotal	0.92	7.86	20.94	0.69	0.40
Transport to POLB/SCAB Upland Disposal Option					
Tug Boat	0.41	1.28	9.39	0.60	0.20
Crane - 60-Ton	0.01	0.07	0.17	0.00	0.01
Haul Trucks - Upland disposal	0.32	4.16	7.25	0.05	0.12
Transport and Disposal Option Emissions - Subtotal	0.74	5.50	16.81	0.66	0.33
Rock Transport and Placement					
Tug Boat	0.09	0.27	2.01	0.13	0.04
Total Emissions - LA-2 Disposal Option	0.39	1.23	9.05	0.58	0.19
Mitigated Total Emissions - LA-2 Disposal Option	0.39	1.23	6.42	0.58	0.07
Total Emissions - POLB Re-Use Option	0.50	1.55	11.39	0.73	0.24
Mitigated Total Emissions - POLB Re-Use Option	0.50	1.55	8.09	0.73	0.09
Total Emissions - Kern Co. Disposal Option	1.00	8.14	22.94	0.82	0.45
Mitigated Total Emissions - Kern Co. Disposal Option	1.00	8.14	16.29	0.82	0.17
Total Emissions - SCAB Upland Disposal Option	0.83	5.78	18.82	0.79	0.38
Mitigated Total Emissions - SCAB Upland Disposal Option	0.83	5.78	13.36	0.79	0.14